**SW Engineering Fall 2021**

**[FAU: CEN4010]**

**ETL (Easy to Lift)**

**Group:13**

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**Milestone 1**

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**SUMMARY**

At the end of every year, everyone set goals for themselves. Some individuals plan to make more money, some plan to buy a new car, some plan to study harder and achieve better grades, but the most common goal that every person sets for themselves is to go to the gym. It is a dream of every individual to achieve the famous six pack abs. in the beginning of 2020, when COVID-19 emerged. It took the world with a storm. The lockdown was practiced in each part of the world. Due to this global epidemic, a lot of businesses and dreams were shattered, and people were locked in their homes. Therefore, most of the people around the world could not achieve their goals, to be specific their fitness goals. This is where our ETL home workout site comes into play.

There are many fitness websites out there, but the key point that our website has that the others lack is that our website revolves around fitness using daily household equipment. Different people have different mentality. Also, different people have different bodies. Some might suffer from obesity, and some might suffer from emaciation. Therefore, this website will take into account the user’s preference and give them workouts/videos, that will help them achieve the goals that they wish to achieve without any judgement, and from the comfort of their bedrooms or living rooms.

ETL fitness website takes its name from the abbreviation (Easy To Lift). It was developed with the goal to aid the people during the rough lockdown of COVID-19. Since, most of the people cannot afford expensive gym equipment such as dumbbells, treadmills and etcetera. ETL will guide them how they can use their daily household items to tone their bodies, so when the lockdown is removed, they can enjoy the outdoors like a new person.

ETL provides the best home workouts. It allows you to comment and give it a rating using a star rating system. This would allow the users to see if the work outs are effective or not. Moreover, this platform also enables the user to post their own works outs and tell the world what works for them.

In addition, the ETL fitness site is tailored in such a way that it allows the users to search for the workouts they are looking for rather than going through the list of workouts that our site has to offer.

**Competitive analysis**

|  |  |
| --- | --- |
| Other fitness sites | ETL fitness |
| PAID SUBSCRIPTION | FREE SUBSCRIPTION |
| NEED OF GYM EQUIPMENT | NO NEED OF GYM EQUIPMENTS |
| NO FEEDBACK | FEED BACK BY COMMENTS |

ETL fitness website is very user friendly. Its simple home page catches the users eyes with motivational photos, quotes and a search bar. The navigation is consistent across the website. The search is on the point and provides quick results for what is being input by the users. The features implemented on the site are comments, star rating and add your own workouts.

Most of our competitors provide workouts. However, the user is required to join a premium membership to access the full workouts. The navigation is consistent, and the home page is very user friendly. On the other hand, our competitors do not provide a forum on which the users can comment and share their personal opinions.

**Data Definition**

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Meaning** | **Usage** | **Comment** |
| Visitor | actor | Use Case scenarios, | this person is not familiar with the area of reference |
| User | actor | Use Case scenarios | General definition for both visitor |
| Member | actor | Use Case Scenarios | A user who is registered with the system. |
| Non-Member | actor | Use Case Scenarios | A user who is not registered with the system. |
| Activity | data | Searchable activities | Represents activity that is searchable. |
| Account | data | Use Case scenarios | Store users’ information |
| Recommend | data | Use Case scenarios | Store the highest rating activities |

**Data Definition**

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Meaning** | **Usage** | **Comment** |
| Rating | service | Site user service | Allows user to rate different services |
| Comments | service | Site user service | Allows users to leave their opinions |
| Navigator | service | Site user service | Helps visitor to navigate web page easier |
| Photos | service | Site user service | Allows user to post pictures |
| Search | service | Site user service | Allow user find Workouts |
| Filter | service | Site user service | help user search more clearly by giving specific options |
| log in | service | Site user service | Allow user have ability to use comment, rating, photos. |
| Web Site | User Interface | User interface | Front end display for user interaction |
| Home page | User Interface | User interface | The first page that a user go |

**Data Definition**

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Meaning** | **Usage** | **Comment** |
| Information Page | User interface | User interface | Page that is displayed when an Workout is clicked. This page displays photos, comments, etc. |
| System | platform hardware and services | Use-case scenarios | The MySQL database, all code, front end design and back end supporting services. |

**Use Cases**

**Use Case -Sign up for free or log in**

The user comes to the page, and it has two options:

1. Sign up for free

If you are the first-time user, you must sign up with your email address/phone number and password for free of cost. You don’t need to fill up any payment detail since, the service is free.

1. Log in

If you already completed instruction in number I, you could just log in with your email/phone number and password and take a benefit from ETL app.

**1.Description:**

Use case describe the process of how the User can enter the page.

**2. Actors:**

2.1 User

2.2 System

**3. Preconditions:**

3.1 Use has Email/phone number.

3.2 User has an active internet connection.

3.3 System is available.

**4. Primary Flow of Events:**

1. User arrives on web page.

2. User must sign up for free with email or phone number.

3. User can log in through their respective email or phone number if they signed up already.

4. User can enter to home page.

5. Terminate Use Case: Sign up for free or log in.

**5. Alternate Flows**

5.1 Enter invalid email/phone number or password

If user enters incorrect email/phone number or password.

1. Web site notifies invalid enter.
2. Return to step 1.

5.2 Forgot email/phone number or password

If user forgot their email/phone number or password.

1. Reset it using their credential.

5.3 User does not have an account

If user does not have account in a web page

1. User performs Use case: Sign up for free or log in

**Use Case – Rate a videos**

When user log in to the page and wants to quickly rate the videos of fitness. User can add a rating of 1 to 5 stars to the videos.

**1.Description:**

Use case describe the process of how the User will rate a video in the page. See Use Case: Rate a video.

**2. Actors:**

2.1 User

2.2 System

**3. Preconditions:**

3.1 Use has active email/phone number.

3.2 User has an active internet connection.

3.3 System is available.

3.4 User is logged into system.

**4. Primary Flow of Events:**

1. User arrives on web page.

2. User logged in, to rate a video.

3. User rates a video with 1-5 stars.

4. Terminate Use Case: Rate a video.

**Use Case - Comment**

When user is logged in and enter to the page, they can add a comment in the posted videos in the page. User then performs Use case: Sign up for free or log in. User clicks on the comment button of the video. User enters a comment and hits submit button.

**1.Description:**

Use case describe the process of how the User will post a comment into a video of the page for other users to view.

**2. Actors:**

2.1 User

2.2 System

**3. Preconditions:**

3.1 Use has active email/phone number.

3.2 User has an active internet connection.

3.3 System is available.

3.4 User is logged into a system.

3.5 User rates the video.

**4. Primary Flow of Events:**

1. User arrives on web page.

2. User performs Use Case: Sign up for free or log in.

3. User rates the videos.

4. User clicks on Comment button.

5. Web page displays field to enter comment.

6. User enters comment and clicks submit button.

7. System pop up “Thank you” message to the user for the comment.

8. Terminate Use Case: Comment.

**5. Alternate Flows**

**5.1 User tries to comment without Rating the video first**

If user tries to comment without rating the videos

1. Web page requests the user rate the video first.
2. User rates.
3. Return to User Case: Comment.

**5.3 User Exceeds Comment Maximum Length**

If user types over the maximum length of the comment.

1.Webpage informs user that their comment has exceeded the maximum length.

2. User reduce the length of comment.

**Initial list of functional requirements**

**Non-Member expectations**

1. **Signing up**
   1. The system will allow the user to sign up for free and create an account by storing an email address, phone number, a userID, password, date of birth, first name, last name, and a security question’s answer.
   2. Response Sequence
      1. User selects “Register” at the top of the Home page, linking them to a separate sign up page.
      2. User enters their email
      3. User enters their phone number
      4. User enters a userID
      5. User enters their password
      6. User re-enters password for confirmation
      7. User enters their first and last name and their date of birth
      8. User selects one of the pre-written security questions and provides an answer for it
      9. System checks if the userID, email, and phonenumber aren’t repeated from a previous sign-up process
      10. System validates the password
      11. System stores the user’s name, date of birth, and security answer
      12. System provides a button back to the home page
   3. Label: REQ 1.1 Signing-Up
2. **Browsing Top Posts**
   1. The system will show on the home page a selection of top-rated posts uploaded to the website. Higher rated and newer uploads will be shown at the top and older lower-rated uploads will be buried at the bottom. Each post will display a title, the author’s userID, the author’s profile picture, a rating from 0-5 stars, an image preview, and a short snippet of the caption. Clicking on a post will take the user to a separate page for it. Users do not need to make an account to view content.
   2. Response Sequence
      1. User enters the home page and scrolls to the Top Posts section
      2. System provides a handful of top-rated recent posts to the user
      3. User may scroll up and down on the list and select a post
      4. User clicks on a post which links to another page
   3. Label: REQ 2.1 Browse Top Posts
3. **Searching for Posts**
   1. Users may use a search bar on the top right of the page to search for uploaded content. This search function will select uploads containing the keywords provided by the user. Search function will provide the user content most relevant to their search, based on how closely related the search is to the upload, the rating of the post, and how old the post is.
   2. Response Sequence
      1. User enters the home page and clicks on the search bar at the top-right
      2. User types in keywords or phrases
      3. System searches posts in the database for those keywords and phrases
      4. System returns to the user a list of relevant uploads
      5. User selects one of them linking to the individual post
   3. Label: REQ 3.1 Search Function
4. **Individual Posts**
   1. After clicking on a post after browsing or searching the system will direct the user to the post page. The page will display the full title of the upload, whatever video or image content it includes, the full text caption of the post, the author’s userID or name, the author’s profile picture, the post’s rating. Scrolling down past the post will reveal a comment section where users may upload comments relating to the above post. Each comment display the author’s ID and profile picture, a comment rating, and the comment content. Each comment may be commented on, creating a thread slightly indented for legibility displaying the same information as any other comment.
   2. Response Sequence
      1. User is linked to a separate page
      2. User reads the content of the post, watches the video, looks at the image(s), and reads the text caption
      3. User may then read the user comments underneath the post
      4. User may from there click on any user link in the page, return to the previous page, or return to the home page
   3. Label: REQ 4.1 Uploads
5. **About Page**
   1. Separate page from the Home page that details the functionality of the website and provides information to the user about this website. This page contains information about the development team and credits. This page contains contact information and an FAQ.
   2. Response Sequence
      1. User enters the home page and clicks on the “About” link at the top of the page
      2. System links user to a separate page containing the About Information
      3. User may read that information, contact us, or leave the page back to Home
   3. Label: REQ 5.1 About Page

**Member expectations**

1. **Signing In**
   1. After a user has created their account, they may now sign into that account using their email/phone number and password so they can now upload posts and comments and rate the posts on the website as well as have their own posts be viewable from their profile page
   2. Response Sequence
      1. User selects “Sign In” at the top of the home page linking them to a separate sign in page.
      2. User may type in their email or phone number
      3. User types in their password
      4. System validates the email/phone number
      5. System validates the password
      6. If incorrect the system lets the user know and allows them to select “forgot my password” which will allow them to use the security question and answer to change their password.
      7. If correct, the system redirects the user to their Profile page, this time signed into their account
   3. Label: REQ 6.1 Sign In
2. **Profile Page**
   1. Users have a profile page that they can access and edit at any time given that they have created an account. This Profile page includes a profile picture which is displayed next to their account name in any post or comment they upload. Profile includes a bio that the user may edit that displays any information they want other users to know about them. Profile page asks users if they’d like their name to be viewable but includes all the personal information of the user, and the user is able to decide what will and will not be displayed. Profile also includes every post that the user has uploaded and an aggregated user-rating based on the posts and comments they have uploaded.
   2. Response Sequence
      1. User selects “My account” in the home page which links the user to a separate page; if the user is signed in, that page is the Profile page, if the user is not then it is the sign in/sign up page which will then redirect to their Profile page.
      2. System displays user information provided
      3. User clicks “Edit Profile” where they may edit any information of their profile
      4. User clicks “Privacy” where they may edit any privacy concern such as withholding their name to other users.
      5. User scrolls down to “My posts” and may scroll through the posts that they have made
   3. Label: REQ 7.1 Profile
3. **Uploading Content**
   1. The website is entirely user-uploaded content. At the home page there is a button provided for if the user would like to upload any content. This links the user to a separate upload page. User has to write a title and a caption, may choose to have a video or an image additionally. This post is completed and then uploaded where it may be seen in the Top-posts page and in the user’s private page. User may add tags at the end of the caption for easier searching.
   2. Response Sequence
      1. User selects “Upload” in the Home page, redirecting them to a separate page
      2. User types in a title for the upload
      3. User may add a video or an image to the post
      4. User writes a text caption for the upload
      5. User includes tags for the search function to find this post
      6. User clicks on an “Upload” button
   3. Label: REQ 8.1 Uploads
4. **Rating Posts and Comments**
   1. Every post and comment has a rating from 0-5 stars which is the users provide. This rating is an average of every single rating given to a post. The purpose of this is so only top-rated posts are displayed to the userbase and for users to know if a post is of good or bad quality based on what other users thought of it. Comments are rated in the same way and the same sorting algorithm is applied to them. Top-rated and more recent posts/comments are shown at the top while lower-rated and older ones are shown at the bottom of the page.
   2. Response Sequence
      1. User selects a post or a comment
      2. User selects next to the post/comment one of the following ratings: .5 stars, 1 star, 1.5 stars, 2, 2.5, 3, 3.5, 4, 4.5, or 5 stars. The ratings are increments of .5, the lowest possible rating is no rating.
      3. System lights up the button selected indicating to the user they have made their selection
      4. System saves the uploaded rating to the database, adjusting the weight of the post/comment
      5. Each user may rate a post once
   3. Label: REQ 9.1 Rating
5. **Uploading Comments**
   1. At the bottom of a post a user may upload a comment about the post.
   2. Response Sequence
      1. User reads a post or a comment uploaded to the
      2. User selects the “Comment button”
      3. User types in the text
      4. User clicks the “Upload” button
      5. System displays the comment underneath the post
   3. Label: REQ 10.1 Comments

**List of non-functional requirements**

**Performance Requirements**

**Responsiveness** – System will be responsive, operating on various monitor sizes and will be responsive to a variety of resolutions.

**Cycle Time** – The cycle time at expected performance will be 1.0. With this in mind, the system will operate between 1.0 – 1.2 with a load of 5-10 concurrent users or a slight lag. The system will operate with a 1.21 – 1.3 with a load of 11-25 concurrent users oro a moderate lag. The system will operate with a 1.31-1.5 with a load of 26-45 concurrent users or a heavy lag. Finally the system will operate with 1.51-1.7 with a load of 46-50 concurrent users or a very heavy lag. Any number of concurrent users over 50 will cause the systems performance to halt briefly until a user finishes.

**Speed per Transaction** – 20-100 milliseconds, depending on the cycle time. The system will process 10-50 transactions per second.

**Test Requirements** – the test requirements for performance will include an expected load test as well as testing on all of the functional specs listed and their speed per transaction.

**Reliability** – Mean time between failures is that it must have 1 hour or less of downtime in a total of 3 months. This downtime can be used to perform maintenance and update information. The system should be operation 100% of the time for the first 99.8% of the calendar for the first year of its operation.

**Minimum Bug Counts** – No more than 5 bugs in the system during integration and testing, no more than 3 can remain after delivery

**Execution Speed** – 100-200 milliseconds depending on the current cycle time, at the initial home page on a high-speed internet

**Storage Utilization** – 75-90% of available storage provided at the time ast o not get too close to using all storage and having a technical issue if more storage is needed.

**Robustness** – Under an hour to restart after a failure.

Usability Requirements

The ease of use will be a top-priority of the website, as navigation and functionality is to have minimal training time. Site design is user-friendly and intuitive

Interoperability Requirements

**Browser Compatibility** – System is a website that operates on at least two of all the major browsers including google chrome, mozilla firefox, safari, opera, and internet explorer. It will have functionality that will provide alternatives if the browser does not have javascript installed in it.

**Computer and OS Compatibility** – System operates on various types of operating systems, including Windows, OS X, and Linux. Also operates on any type of computer which can run a browser which is supported.

Accessibility Requirements

All content uploaded and the website will be accessible to persons with disabilities as there will be options and settings as well as content catering to those needs.

Expected Load

There are allowances of up to 50 users at the same time. Load testing will be done to record performance times during periods of high traffic, both in a continuous and in a spiked pattern

Storage Requirements

The storage for our system will consist of the lamp server holding our mySQL database within an unknown capacity as well as holding our files for the actual site.

Security Requirements

**Login/Password System** – The system has a login and password system to regulate content uploads

**Encryption** – Passwords and other content are to be encrypted as per the safety and privacy concern of the users. Regular users use the same passwords for multiple websites so there will be no plaintext storage of passwords or private user information.

**Access Control** – Editing of front and back end code will be available to anyone of the development team. Users and developers with moderation privileges will have access to some information that regular users don’t have access to. Users and visitors will have a limited access to using the system based on the user interface.

**Spam Protection** – The site will utilize a captcha system to create an account, prevent bots from spamming the site and creating fake accounts.

**Resource Utilization** – Resources will be accessed with the usernames and passwords of special development accounts.

User Safety and Moderation

User-uploaded content will be moderated for its content. Anything deemed to be harmful or dangerous or malicious by the moderation team will be removed with notice to the user. Users may report content that breaches the safety and conduct standard. User safety and privacy is to be a main concern.

Availability

**Accessible times** – Site will be accessible 24 hours a day, 7 days a week and will be up and running for as long as the lamp server is available.

**Downtime impact** – Minimal downtime but when it is necessary, the system will inform users that the site is undergoing maintenance and it will also let the users know when the site with undergo maintenance in the future.

**Support** – Support availability will be via the email provided in the About page of the website, responsive within 24 hours.

Fault Tolerance

Should an exception occur, an explanation will be provided to the user and give them a chance to input the correct answer or they will be taken back to the home page. Self-checking software won’t be implemented as it’s not necessary.

**High-Level System Architecture**

1. Lamp.cse.fau.edu: The FAU Lamp server is a Linux Apache MySQL [LAMP] server that is used in a variety of web classes. It provides access to the following facilities. We will be using the following.  
     
   -MySQL (for database development)  
   -PHP (for web-based development)  
   -Apache (for web-based development via PHP)
2. Visual Studio Code: IDE: Visual Studio is a source code editor made by Microsoft. We will be using it primarily for Full-Stack development. Some of the Languages that will be used are:  
     
   - Hyper Text Mark-up Language (HTML): This Language will allow the browser to display the website.  
   - Cascading Style Sheets (CSS): This language will be used to style the web pages.  
   - Bootstrap: This is a framework that will be used for code construction. This will enable our website to display correctly in many different devices and aspect ratios.  
   - JavaScript: JS will be used on client-side. It will allow us to make the web page interactive.  
   - Personal Home Page (PHP): PHP will be the language used for the server-side functionality.
3. PHPMyAdmin: It is an open-source administration tool for MySQL as a portable web application. We will be using Database purposes.
4. GitHub: Is a provider of Internet hosting for software development and version control using Git. We will be using it to collaborate with each other during the code construction.
5. ExerciseDB API: ExerciseDB, created by Justin Mozley, is an API that contains many different exercises for body parts and targeted muscles.
6. Browser Compatibility: Our Website will be a web-based web app that will operate on the major browser. Google Chrome, Mozilla Firefox, Safari and Microsoft Edge.

**Team Members & Roles:**

* + - Julio Berrocal (Scrum Master, Full-Stack Developer, Jira Master)
    - Muhammad Dagra (Product Owner, Front-End Developer, GitHub Master)
    - Jamal Grant (Front End developer)
    - Madan Shrestha (Back-End Developer)
    - Joao Staziaki (Back-End Developer)

**Checklist**

* Team decided on basic means of communications (DONE)
* Team found a time slot to meet outside of the class (DONE)
* Front and Back-End team leads chosen (ON TRACK)
* GitHub Master chosen (DONE)
* Team ready and able to use the chosen back and front-end frameworks (ON TRACK)
* Skills of each team member defined and known to all (ON TRACK)
* Team lead ensured that all team members read the final M1 and agree/understand it before submission (DONE)